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FOOD PROCESSING INDUSTRIES IN UAR.

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Food Processing Industries in the UAR

By

Hassan Ashmawi

Contents:

		Page
1.	Introduction	1
2.	Sugar Industry	5
3.	The Development of the Edible Oil Industry in the UAR	9
4.	The Development of Preserved Food Industry in the UAR	11
5.	The Development of the Dairy Industry in the UAR	15
6.	Starch, Glucose and Yeast Industries in the UAR	19
7.	Beverages	21
8.	The Development of the Biscuit Industry in the UAR	24
9.	Conclusion	26

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By

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Introduction

In the last World Food Congress which was held in Washington D.C. in June 1963, I was asked by the FAO to speak about "Problems of esteblishing food industries in developing nations". In that presentation I compared the industrial development in UAR before and after the 1952 revolution. I also mentioned some of the problems we faced when we set our first Five Year Plan for establishing food industries and how they were solved.

In this presentation, which should be considered as a continuation to the previous paper, I feel that I should deal with the subject from another angle in order to emphasize the points that were of special interest to us and to mention some of our accomplishments in this field.

The role of agriculture

In any economically developing country, the agricultural sector must provide more food for the increasing population. It must also provide the food processers with high standard raw materials instead of exporting these products to the highly industrialized countries and then turning around to import the processed foods from these countries. In UAR the arable land was always limited by the amount of water available. This water was made available by reserving some of the flood water of the Nile River. A plan was set up aiming to increase food production from the existing acreage, beside a plan for increasing the available land by reclamation of around 1.25 million acres to be added to our 6 million fertile acres. This was made possible by the completion of the Aswan High Dam. This high dam will also enable the transformation of around a million acres from basin to perennial irrigation which, in turn, will increase their productivity.

Before 1952, food processing industries were suffering from the heterogenous raw materials, and it was impossible to produce satisfactory processed foods from fruits and vegetables of different varieties and of different degrees of maturity. This made it very difficult for our products to compete with those of highly developed countries in the world markets. In highly developed countries the food processers work with standardized high quality raw materials. They also have abundant specialists available to solve the various rocessing problems that may arise from time to time.

As we believe that agricultural development is a prerequisite to the development of food processing industries, we set our aim, first to produce high quality raw materials, and then to improve production efficiency.

Storage losses

The causes of spoilage resulting in losses during storage are manifold. It can be attributed to the action of enzymes in the stored product resulting from breathing or the germination of seeds, or the sprouting of bulbs. Spoilage may also be caused by oxidation, insects or micro-organisms. Most of these spoilages occur only when a certain amount of moisture is present. So tho main danger to products in storage comes from high humidity, insects and micro-organisms. It is important to distinguish between direct and indirect losses during storage. Direct losses occur when part of the stored product vanishes, usually through the action of insects, and less frequently by chemical decomposition or spontanious combustion; indirect losses are caused by other types of spoilage which either lower the market value of the stored product, or even make it unsaleable. Sometimes the product becomes inedible then it must be used for other industrial purposes, as in the case of rancid fats and oils, or the fats and oils with high free fatty acids content extracted from spoiled or low quality oilseeds. Such indirect losses are more difficult to estimate than the direct losses, but the resulting low prices not only reduce the standard of living of the producers, but also discourage farmers.

Storage losses will be overcome as soon as the projects of the organization of silos and storage are completed.

Processing losses

Processing losses can be divided into three main groups:

1. Losses due to unripening or over-ripening, or faulty harvesting of products.
2. Direct losses due to wastage products or by-products.
3. Indirect losses resulting from faulty processing, giving low quality products.

There was a tendency among the farmers in UAR to harvest unripe products. This can be easily explained by their anxiety to sell the crop as soon as possible because of lack of cash money. This was done to most fruits and vegetables such as oranges, grapes, water melons, sugar cane and groundnuts. The unripe crops usually have a lower sugar, high acidity and/or low oil content. Such losses appear only after processing and are accompanied by the different problems experienced by processing unripe products. The size of these losses is not easy to assess but it is normally quite large. With better processing methods and better control and through extension service, the farmers can become more conscious of these losses. In the UAR there is a continuous effort exerted by the rural industries on farmers to improve their harvesting procedures, and so these losses are now reduced to a minimum.

Direct processing losses occur in the form of by-products or waste products, such as oil cakes, mollasses and bagasse, husks, bran and orange peel. Some of these by-products in the past had limited use as animal food or as fuel. Although certain losses in processing are unavoidable, these should be small and efforts should be made to reduce them to a minimum by applying modern techniques and using modern equipment. The solvent extraction method for example can reduce the oil content of oil cakes to about 1 or 2 per cent and, by replacing the existing oil mills in UAR with the solvent extraction method, an increase in the output of oil production estimated at 30,000 tons will be realized before 1970. Another example for making use of the by-products is the factories established in UAR for the extraction of oil from rice bran. One factory is already operating in Alexandria since 1961 and another four factories are under construction. The total production of rice bran oil after the completion of these factories will be 8,000 tons, having a value of £ E 700,000.

The UAR experts, after extensive studies, have succeeded in finding use for the sugar bagasse, the Food Organization has inaugurated in May 1965 the first paper pulp plant from bagasse, the second line is under construction. Another plant for the production of paper for the press from bagasse pulp is also under construction.

The value of these products manufactured from bagasse after the completion of these projects is estimated at £ E 23,076,000, in place of its former fuel value which was £ E 1,500,000.

These projects are only a few examples of what UAR experts have achieved in developing food industries and making use of the by-products.

Primitive and/or faulty processing procedures indirectly affect production, since products of bad quality are low in price or may not be marketable at all.

Very often, the extent of processing losses is not known because of lack of control and insufficient facilities for analyzing the by-products and waste products, or because there is not enough trained staff available. It must be considered that the first step towards reducing the processing losses is to improve control methods in order to make all concerned aware of the extent of their financial losses.

The next few pages demonstrate the developments achieved in UAR food industries after the revolution of 1952.

2. The Sugar Industry

Sugar is produced in UAR from sugar cane. This crop was first introduced in Egypt by Arabs in the 7th century. Primitive sugar production started around the 9th and 10th centuries. Before the 1952 revolution the newest sugar factory was established in 1903.

The total production of sugar cane in the year 1952 was 188,000 metric tons. In our first Five Year Industrial Plan, a programme was set up in order to develop this industry and to increase the amount of sugar production. And as the expansion of sugar cane plantations depends on the amount of irrigation water available, the sugar production is planned jointly with the establishment of various irrigation schemes. The High Dam of Aswan is considered the main project on which the expansion in sugar cane plantation depends.

After the completion of this project the cane plantation will cover about 270,000 acres (115,000 hectares) and produce around 10 million tons of cane which, in turn, will yield more than one million tons of sugar each year.

The present area of sugar cane plantation amounts to 115,000 acres and this area will be increased to 272,000 at the beginning of 1970.

At present the average yield of sugar cane per acre is around 40 tons. A series of studies are carried out by the technicians of our sugar companies, in collaboration with the Ministry of Agriculture and Professors from the UAR Universities to improve the yield. These studies already improved the yield per acre. The research is also directed to eliminate the low varieties and to prevent the "stunting disease" by treating the seeds before planting.

An experimental station for sugar cane equipped with greenhouses was established in upper Egypt at "Mataana" in order to make the inflorescence, of the sugar cane possible thus new hybrids and varieties can be obtained.

The development of sugar industry

As mentioned before, the production of sugar in the year 1952 was 188,000 metric tons; this production was raised according to the development plan as follows:

1957	62/63	63/64	64/65
299,000	358,000	382,000	420,000

Our five existing sugar mills are located in Abu Kourkas, Nag Hamadi, Armant, Edfu and Kom Ombo. Their combined crushing capacity in this season 1964/1965 was 4.2 million tons.

The crushing capacity of four of these mills will be increased, one new mill is under construction at "Qus". Orders have been placed for two more mills bringing the total number of mills to eight with a crushing capacity of 10 million tons per year. The crushing season starts at the end of December and lasts to the end of April.

A large sugar refinery with the capacity of 1,200 metric tons per day is located in Hawamdiah.

The following table shows the crushing capacity in the 1964/1965 season as compared to the expected capacity after the completion of the present expansion programme.

Figures are expressed in thousand metric tons:

Name of the factory	Crushing 64/65	Planned capacity season 70/71
Abu Kourkas	611	650
Nag Hamadi	1,162	1,500
Armant	833	1,200
Edfu	434	1,000
Kom Ombo	715	1,500
Qus	-	1,500
Deshna	-	1,200
Baliana	-	1,500
	3,755	10,050

The total expenditure on the sugar projects will amount to ± E 100,000,000.

In the meantime, several projects for the utilization of sugar by-products are also either completed and are in operation or under construction and will be operating before the end of the second development plan 1965-1970. These projects will be executed in the same location of the sugar factories.

The estimated cost of these projects is as follows:

1.	Dry yeast	173,315
2.	Sugar Wax	623,700
3.	Particle Board	7,473,000
4.	Potassium Sulphate	742,850
5.	Glacial acetic acid	91,690
6.	Unbleached pulp from Bagasse	9,536,800
7.	News print	38,000,000
8.	Corrugated medium	10,000,000
9.	Bleached pulp	16,000,000
	Total expenditure	64,641,355

It might also be of interest to mention the great breakthrough in sugar technology accomplished by the staff of our "Société de Sucreries et de Distillerie d'Egypte" which involved tedious primentation and a lot of co-operation among the staff. This achievement involves a new process called "The continuous sugar cane diffusion process". This method is internationally patented and is used by several sugar refineries all over the world.

The main advantages of this process over classical milling procedure may be summarized as follows:

1. Reduced capital expenditure and reduced maintenance cost of the milling station.
2. Reduced losses of sugar in bagasse and elimination of losses by bacterial action in the milling station.

3. The juice extracted from bagasse is of higher purity.

A paper about this process was presented by Dr. M. H. Tantawi in the "International Society of Sugar Cane Technologists" in its twelfth congress in San Juan, Puerto Rico (1965).

3. The Development of Edible Oil Industry in UAR

There is a continuous increase in the consumption of edible oils, soaps and detergents in the UAR. It is due to the rise in both standard of living and population.

The edible oil industry in the UAR depends mainly on the extraction of oil from cotton seeds. The oil obtained is thus dependent on the cotton crop. The amount of oil produced in the last few years was insufficient to meet the country's growing needs.

About 30 oil mills are processing cotton seed using either hydraulic or screw process. Only one mill is using the solvent extraction method.

Conventional methods of oil refining is carried out in most plants. As a result they experience a high percentage of loss.

Another reason for such high loss may be due to losses occuring as a result of storage.

To eliminate such losses, a revolutionary plan involving improved procedures for the extracting, refining and storage of seeds was contemplated. The plan has provided for all the existing mills to switch to the modern and efficient extraction method of oils using organic solvents. This will lead to the installation of 14 production units capable of processing more than 840,000 tons of seeds a year. A corresponding number of continuous low-loss refining plants are also ordered, some of which are under construction and some are already functioning. Well ventilated seed storage facilities are to be constructed as a part of this plan. These improvements will increase the annual oil production by about 27,000 tons.

To increase the oil resources of the country, other projects are in the way of realization, mainly:

(a) Increasing the area cultivated by oil bearing products, mainly groundnuts, sesame, soybean and safflower.

(b) Installation of four solvent plants for the extraction of oil from rice bran. The yield will attain more than 6,000 tons a year.

(c) Installation of one more solvent plant for processing groundnuts and soybeans. A yield of 10,000 tons of these oils a year is expected.

In addition to these, the selection and breeding of new cotton varieties of high oil yield and of good fibre and oil quality are undergoing. Work on complete utilisation of wastes in slaughter houses and fish industries is also being carried out. All these efforts will help to cover a great part of the edible oils needed for the country to reach self-sufficiency.

The use of shortenings, made of hardened oils or blends of oils and animal fats, became known to the local market in the last ten years. Shortenings have almost replaced butter fat for domestic use. The existing hydrogenation units with some efforts can be made to double its original capacities, and meet the increasing needs. In anticipation of further increased need four new units are being added.

Soap, in its various forms has also developed in quantity and quality. Some of the existing soaperies use continuous mechanized equipment. Furthermore, 10 new projects for the development and modernization of the processes are foreseen. Toilet soap has also increased rapidly in production. All the existing soap production units are up-to-date.

Detergents are rapidly becoming commonly used. The increase in their consumption is going side by side with increase in consumption of household soap. Dodecyl benzene, being the main constituent is now locally produced, other ingredients required for such powders are going also to be produced in the country.

Demands for animal feed are also increasing. To the present production units, new ones will be added as well as solvent plant.

With these developments, the Edible oil and its Allied Products industry, will be able to compare favourably with all other progressing industries, which the UAR now possess or will be possessing according to the second development plan.

4. The development of preserved food industry in the UAR

Food preservation as an industry did not exist before the 1952 revolution. Individual efforts of few persons, with insufficient experience in this field existed in a limited way. Their main objective was to obtain the highest and quickest possible profits. The country till 1952 was importing big quantities of preserved vegetable and fruit products in order to meet the local needs.

In the year 1951, the imported vegetable and fruit products reached 4,185 tons valued at L E 349,886, compared to a total local production of only 800 tons.

Since the revolution the preserved food industries were given the same attention given to other industries. As a result of intensive studies, planning this industry was accordingly guided, and many factories were established. The canned food production in the year 1964 was 22 times that of the year 1951.

This was accompanied by a big decrease in imports. Imports of processed foods nearly vanished in the year 1961. In the contrary, UAR exports of processed food increased by 55 folds during this period.

The canning industry has the advantage of the completion of the commercial purpose for the development of vegetables and fruits cultivated and fresh packaged, because of transferring the surplus to preserved products, consequently prolonging the consumption season to 12 months. The development plan in this industry includes the establishment of six new canneries for fruits and vegetables distributed among the following governorates:

1. Kalyubia
2. Kafr-el-Shekh
3. Beni Suef
4. Munufia
5. Sharkia
6. Fayum

Besides other projects are going into effect such as replacement, expansion and perfect utilization of the existing factories' capacities.

Sardine and shrimp canning

The UAR coasts are considered to be an important source of fish, which is not profitably and economically exploited up till now. In spite of the fact that the coasts of the UAR are about 2,500 kilometres long and the area of lakes are 600,000 acres, only a small portion of this area is exploited.

The consumption of sardines in cans in the year 1964 was about 7,000,000 cans. Damietta is considered to be the biggest and largest fish producing area in the country, the fishing season lasts for four months. The Suez area is also an important one as the fishing season is long and practically covers the whole year.

The industrial plan included the establishment of a factory for sardine and shrimp canning, which was completed and inaugurated at the end of the year 1960. The plan also included the construction of another factory at Horgada in the Red Sea area, a factory for canning tuna fish and sardines in Suez, fish meal in Damietta and Red Sea area, and the establishment of a modern fishing fleet, which will supply these factories.

Frozen food industry

a) Frozen shrimp

This industry is new in the UAR, it did not exist before the year 1952. The first plant producing frozen shrimp started in 1955.

The Egyptian frozen shrimp took an important position among the group of the manufactured food products exported by the UAR in the last years. The exported amount reached 382 tons in the year 1964 valued at 529,496 pounds in foreign currency.

We have at present in our country six freezing factories, four are located at Alexandria, the other two at Port Said, another factory is being added to the four in Alexandria. 10,000 tons of fresh shrimp are needed annually for running these factories with its full capacity producing 4,000 tons of frozen shrimp mainly for export.

b) Frozen vegetables and fruit products

The demand for frozen products shows a remarkable increase in the different countries of the world. As these products are preferable to other processed foods because of taste, colour and nutritional values. In the UAR a programme was put for developing this industry in order to be in a position to meet both export and local market requirements.

Refrigerated transportation vans, cold storage distributing centres and freezing storage, are considered to be joining objectives to verify the successful developments in this industry. The production programme for this year is over 200 tons of frozen vegetables.

Drying industry

a) Drying of onions

The exportation of fresh onions takes the third position in exports of the UAR after cotton and rice regarding the total values of agricultural exported products, also regarding the total income from exporting operations.

The UAR is considered to be the leading country in exporting onions. The industrial dehydration for onions and some vegetables started on a small scale in Egypt during the last world war. The industry developed and exportation of dehydrated onions started in the year 1950 with 661 tons. This increased to 7,200 tons in the year 1959 and fluctuated in the range of 6,000 tons till the year 1964.

At present there are nine drying factories in the UAR. Six are located at Alexandria and one at each of the following cities: Port Said, Maghaga and Suhag. The last factory at Suhag is considered to be the largest and most modern in the UAR and is one of the projects of the first five year industrial plan. Suhag Governorate was selected for establishing this factory as it is the second producing governorate in the UAR (25-33%) of the total winter onion crop. Moreover, it is famous for a product of excellent pungency and early ripening qualities.

b) Drying of vegetables and fruits

The sun-drying of vegetables is known in this country since the time of the ancient Egyptians i.e., 4,000 B.C. The same sun-drying method with some modifications still exists in all the different parts of UAR, rural, urban and oasis. Many families of different social standards are drying their annual needs of certain vegetables such as okra and water mallows ...etc.

The quantity of vegetables sun-dried is enormous. Accurate estimations are not available. The dehydration of vegetables for export started in recent years.

The main vegetables dehydrated for export are beans, tomatoes, garlic, celery ...etc.

The sun-drying of dates is in existence in several places in UAR. Several modern units of dehydrating and packaging of dates are either operating or under construction in order to replace the old method of sun-drying and to produce high standard qualities of processed dates for local consumption and export.

While speaking of dates, we should mention that this country is famous for its fresh dates. They are normally consumed in the coloured stage. High quality jam is produced from the Samani dates. The dates are sometimes stuffed with almonds, and seasoned with mandarine peels and clover.

The drying of grapes was also established several years ago, and in the development plan a programme was put in both the agricultural and industrial sectors for the production of 2,500 tons of raisins in order to meet the local consumption.

5. The Development of Dairy Industry in the UAR

Before the 1952 revolution, the dairy industry was limited to the private sector in Egypt. There were no factories in the country with a capital exceeding ~~L~~ E 10,000.

The following short statistics show the situation of the dairy industry before the 1952 revolution.

450 Shops selling milk, the capital of each is 100 Egyptian pounds.

120 Small dairies, the capital of each is 3,000 Egyptian pounds.

20 Relatively large dairies, the capital of each is 10,000 Egyptian pounds.

The total number of all factories was about 600, and the total invested capitals were 600,000 Egyptian pounds.

The quantity of milk processed in licensed dairy plants by that time was about 20,000 tons, i.e. 1.5% of the total milk production. 98.5% of the milk production in the UAR was handled with primitive methods in villages or in small plants which cannot secure the sanitary conditions, and were not capable to assure protection against contageous diseases.

According to figures published by the United Nations in "The future growth of world population", by 1965 there will be an additional 65 million children under 15 years of age in those countries usually referred to as technically under-developed. If adequate milk supplies are to be ready for these children, production of milk in under-developed countries will have to increase to the rate of 50,000 litres per week.

Taking above projection into consideration together with the prevailing conditions of the dairy industry in Egypt before 1952, we must conclude that a successful development programme involves comprehensive studies, technical know-how and large budgets in order to be able to meet the projected needs.

With the start of the industrialization in 1952 great attention was given to food industries as one of the main means to raise the standard of living, health and nutrition.

Development of milk production

The establishment of the dairy industry in developing countries depends to a great extent on the availability of raw milk. In our case, special attention must be given to the problems of milk production and methods of processing, characteristic to warm countries.

In some developing countries, milk collection and distribution schemes have been established through international organizations.

An interesting example is the development in the village of Anand in India, just north of Bombay, for co-operative collection and processing of milk.

In the UAR, considerable attention was given to increasing the production of milk. Milk production is a limiting factor in the development of dairy industry. Several ministries, and institutes co-operated to increase milk production. The Ministry of Agriculture, the Ministry of Agrarian Reform, the Ministry of Local Administration, which supervises the combined centres, the Faculties of Agriculture in the Universities also played a significant role to improve quality of the livestock which led to the improvement in the productivity of these animals. This was accomplished by using modern techniques such as artificial insemination and importing selected foreign breeds known to produce larger quantities of milk. One of the important programmes in this respect is Nasser's project, which is a co-operative programme aiming at encouraging the farmers to own and breed the distributed jung buffaloes with credit facilities for the purpose of improving milk production.

The production of milk in the year 1964 reached 2,400,818 tons; its total value is estimated at 120,040,900 Egyptian pounds.

The following table shows the increase in total production in dairy products industry in the years 1952 and 1964:

Year	Total dairy Products
1952	87,840
1964	133,902,7 Tons

The industrial development

In the year 1954, "The Supreme Council For Public Service" established 12 milk collecting and cooling centres. The capacity of each centre is 5 tons to supply the dairy factories with their requirements of raw milk. In the same year Misr Milk and Food Company was founded and the construction of the Cairo plant was completed and it started its operation in the year 1959.

The capacity of the plant is 100 tons of raw milk per day. In the year 1956 the Sakha plant for dried milk was constructed in Kafr El-Sheikh Governorate.

Industrial projects after the 1952 revolution

The Ministry of Industry was established in the year 1956, and several programmes were amended and revised to be more adaptable for developing the industry. The policy is aiming at establishing a central big dairy plant at each town in the UAR in order to improve the health standard of the people by providing them with the healthy essential milk products which enter in most of the daily diets as we are well aware of the great importance of adequate nutrition and its effect on the improvement of the productivity and the working efficiency of human beings, and in creating a healthy new generation.

A list of completed projects is given below to illustrate the accomplishment achieved according to the first development plan.

A. The Misr Milk and Food Company

Factories:

1) The Cairo Central Dairy plant
(capacity 100 tons/day)

2) The Alexandria Central Dairy plant
(capacity 80 tons/day)

3) The Sakha Dry Milk Plant
(capacity 25 tons/day)

4) The Nesto Plant for Processed Cheese
(produces 1,500 tons of cheese annually)

5) The Damietta Dairy Plant for Cheese Making
"under construction"
(capacity 120 tons/day)

B. El-Nasr Company for Dairy and Food Products

Factories:

Three operating dairy plants at different governorates, the capacity of each is 25 tons/day.

C. Sixty milk collecting and cooling centres are now in the final stage of construction, surrounding the dairy plants, the capacity of each is 5 - 6 tons/day of mechanically cleaned and cooled milk to supply the factories with milk of a high quality and to insure justified payment to milk suppliers according to fat contents of the milk.

Besides a new plant at Kom Ombo - Upper Egypt is under construction and will be specialized in producing sterilized milk by applying the continuous method of treatment.

The total expenditure of the above mentioned dairy projects amounted to £ E 6,000,000 as compared to £ E 600,000 spent in 1952. This amounts to a tenfold increase in expenditure. All projects utilize 10% of the total raw milk production in the UAR.

This fact points out that the successful development of the dairy industry must continue in the future to be able to process most of the raw milk produced.

6. Starch, Glucose and Yeast Industries in the UAR

In the UAR, starch is produced from various main sources:

1. Corn of different varieties and origins. From corn, starch is produced, then subsequently glucose sirup and other starch derivatives such as dextrin and British gum. The main starch producing company in the UAR is the Egyptian Starch and Glucose Manufacturing Co., at Cairo.

A new project is being executed for the enlargement and modernization of these facilities. The total annual production will be increased from 19,000 to 30,000 tons.

2. From rice, starch is manufactured in the factories of the Egyptian Starch Products and Yeast Co., at Alexandria.

Modification and erection of a new glucose factory with a capacity of 80 tons per day (24,000 tons per annum) will be finished during the coming two years.

At present the total annual production of the Egyptian Starch Products and Yeast Co. has reached about 10,000 tons of starch and starch derivatives and 5,000 tons of glucose.

Yeast production at present is approximately 4,000 tons of fresh and dry active yeast per annum. Enlargement of the present yeast factory is now being executed in order to double its present capacity, to about 8,000 tons/annum. This enlargement will be completed during the coming two years in order to meet increasing demands on bakers' yeast for bread industry.

As yeast is a valuable source of proteins, experiments are now being conducted to incorporate this product in the formulation of dry soups and cheese to give such products a high nutritional value.

From molasses the sugar company will also produce fodder yeast for animal feeding.

Production of fodder yeast will begin within one year with a capacity of about 2,500 tons/annum. It is anticipated that the new production will represent a new source of cattle feed and subsequently will help to increase meat production in the country.

3. In order to partially replace corn and rice as a source for starch production, sweet potatoes are now being tried.

It was decided that starch factories may use sweet potatoes as raw material for starch production for 3 - 4 months a year.

The programme of the second five year plan includes some projects to be carried out by these factories such as:

a) The erection of new dextrin plants at Cairo and Alexandria.

b) The erection of a new plant for the concentration of corn steep water.

c) The erection of two modern glucose factories with a total capacity of 160 tons of glucose/day.

Application and Uses

Besides its high importance in nutrition, starch is used in the UAR for many other purposes. It is an essential constituent in pharmaceutical and many chemical industries. It is also used as an auxiliary matter in the textile manufacture.

Today, starch has been demanded by the paper industry, digging of oil and water wells, leather industry etc.

Glucose also has many uses. Apart from its use in sweets, candies, jams, etc., it can be used as a floating media in the separation of many ores.

7. Beverages

The carbonated beverages industry

This industry is considered one of the oldest industries in the UAR. With its start in the year 1884 and until 1940, the bottling plants were old fashioned and primitive. Only hand operating machines or semi-automatic were used. No attention was given to quality or sanitation. Bottled beverages were of poor quality as there was no standard for colour or flavour to be followed. In the year 1940 the first modern plant was established and soon after four other bottling plants were built. In 1952, the State gave special attention to this industry. New bottling plants equipped with modern automatic machines were established.

Availability of standard good quality products increased the demand for soft drinks and at the same time forced the poor quality products out of the picture. The modern bottling techniques, the high standard of specifications and the well-organized distribution systems of the modern products played a significant role in the development achieved in the carbonated beverages field.

Although some small outdated bottling lines were forced to stop production when modern products became available, others with the help of the State were forced to upgrade their products, modernize their operation and were able to compete with the modern plants.

With this background in mind it is easier to understand the reasons why the production of carbonated beverages marked a considerable increase. Such increase was accompanied by improvement of quality and establishment of specifications for the different products produced.

The following figures illustrate the increase in production between the years 1952-1964 and the expected production in the year 1970.

Year	Carbonated beverages Production per million bottles
1952	156
1957	324
1960	568
1962	660
1964	850
1970	1,400

The number of the operating bottling plants was more than one hundred scattered all over the Republic. This number was reduced to only 50 factories most of them are located in big towns. Seventy-seven per cent of the total production is bottled by three big bettling companies belonging to the Egyptian General Organization for Food Industries.

One of the most important projects in this field is the establishment of a factory for concentrates and flavouring ingredients. The production will not only cover the amounts required for beverage industry but will be in excess meeting the needs of all other food industries in the UAR. It is also planned to manufacture enough flavours and beverage basis so that it can be exported to foreign markets.

The five year industrial plan included projects for the establishment of 4 new bottling lines at different governorates, and the expansion of the existing lines. The estimated cost of these new projects is £ E 3,160,000.

Fermented and distilled alcoholic drinks industry

This is considered to be also one of the oldest industries in the UAR. The producing companies were founded in the years 1884 and 1916.

The wine and distilled drinks gained good reputation in the foreign markets. A great attention was given to promote the export of these products.

The rum comes first in the order of products suitable for export, it is manufactured by the fermentation and distillation of sugar cane syrup.

On account of the high quality of the Egyptian sugar cane, the produced rum is considered to be the best in the world. The wine and brandy produced from the grapes grown under the shining sun of the Nile Valley has a special quality which makes it preferable to other kinds produced in other countries.

The Alexandria company for distilled drinks has a new project to produce Scotch whisky locally under license from a Scottish company.

The following data show the increase in the production of distilled drinks.

Year	: 60/61	61/62	62/63	63/64
Production : Value L E.	372,696	391,158	575,434	654,561

The annual production of wine in the UAR amounts to 6,000,000 litres. The new projects for land reclamation include a plan for the expansion of the grape cultivation to add 70,000 acres to the existing grape area. Of this new plantation, 20,000 acres will be for wine production. The increase in wine production is expected to be around 80,000,000 litres within the next seven years.

Beer production in the UAR

Beer production is carried out in the United Arab Republic by the "Société de Bière les Pyramides", which is one of the companies of the "Egyptian General Organization for Food Industries", and operates two breweries in Giza and Alexandria, and also a malthouse in Giza, which is the biggest and the newest in the Middle East.

The breweries' capacity is now around 300,000 Hls. per annum and our effective production for the year 1964/1965 has reached 200,000 Hls.

8. The Development of the Biscuit Industry in the UAR

Biscuits are produced in the UAR by several companies. The most important producing companies are those belonging to the Egyptian General Organization for Food Industries.

The "Bisco Misr" Company share amounts to 50 per cent of the total biscuit production in the UAR, and it operates the manufacturing lines at the present time at full capacity.

To improve the nutritional standard of schoolchildren, biscuits were included in their diet as a bread substitute. This was done not only because of their nutritional value or being highly accepted by infants, schoolchildren and young students, but also because of the easiness of their manufacturing, storage and distribution.

As a result, all the governorates in the Republic have applied for establishing modern biscuit factories locally in order to meet the increasing demands of the citizens and to fulfil the nutrition programme of school students.

The local biscuit market is growing very fast in the UAR, as this product is becoming a normal foodstuff for all the people.

In the past, biscuits have been looked upon as a luxury item, but nowadays and according to the raised living standard in the State, this image changed and now it is considered a basic food essential for children.

The following table points out the development of biscuit production in the UAR during the years 1960-1964 and the expected production in the year 1970, taking into consideration that all the production is consumed locally except a small quantity that is exported.

Year	Biscuit production in tons
1960	11,920
1961	12,616
1962	13,922
1963	15,400
1964	16,500
1970	25,000

The projects of the second five-year industrial plan can be summarized as follows:

1. The establishment of two factories in Munufia and Sharkia governorates.
2. Projects for the establishment of three new production lines in the existing factories.
3. Projects for expansion by adding new equipment in order to overcome insufficiency of the present lines and to operate with the full capacity of production.

The total cost of these projects amounts to L E 2,000,000 of local and foreign currency

9. Conclusion

It might be of interest before we conclude this article, to summarize the results we achieved by developing our food industries.

The value of production in the years 1960-1965, comparable with the value expected in the year 1970

Food Industry	1960 £	1965 £	1970 £
Sugar	28,660,970	39,292,392	96,346,392
Edible oils	27,679,550	40,047,698	45,911,978
Tobacco	59,137,660	105,754,708	126,567,708
Milk	670,551	2,233,786	4,948,661
Drying & Canning	1,594,970	4,226,110	17,689,860
Alcoholic & Distilled drinks	2,576,625	3,933,763	7,826,263
Non-alcoholic soft drinks	4,379,615	7,989,710	12,304,710
Starch, biscuits & sweets	6,933,741	10,007,971	18,382,771

N.B. These figures represent the value of products from companies belonging to the Egyptian General Organization for Food Industries only.

We can sum up:

1. The total value of the production of these companies in the year 1960 was £ 131,633,682 against £ 213,486,138 in the year 1965. The increase amounted to £ 81,852,456, i.e. 61 per cent.

2. The expected value of production in the year 1970 is £ 329,978,343, increase will be £ 198,344,661 more than it was in the year 1960, i.e. 150 per cent.

The investments during the first Five-Year Industrial Plan were £ 42,149,277. The expected investments during the second plan (1965-1970) will be £ 134,250,140 from which a sum of £ 56,592,100 is allocated for remaining projects from the first Five-Year Plan.

Below is a table showing the distribution of the above mentioned budget between companies:

Food Industry	Value of investments completed during the First Plan	Value of investments expected to be completed during the second plan
	£	£
1. Sugar	31,867,624	106,117,100
2. Edible oils	2,653,170	7,952,000
3. Tobacco	2,479,676	4,750,000
4. Milk products	2,142,032	816,400
5. Preserved products	520,413	8,090,140
6. Biscuits & sweets	235,816	1,950,000
7. Drinks	1,355,973	454,500
8. Dehydrated products	437,876	2,420,000
9. Starch & glucose	456,697	1,700,000

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